

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (original) An optical connector arrangement comprising:

a connector component embedded in a substrate material, said embedded connector component including a fibre optic grating optically coupled to a reflector for directing radiation emitted from said fibre optic grating to a surface of said substrate material; and

a surface connector component for collecting radiation emitted from the surface of said substrate material.

2. (original) The optical connector arrangement of Claim 1, wherein the substrate material is a composite material.

3. (currently amended) The optical connector arrangement of Claim 1 or Claim 2, wherein the substrate comprises a plurality of material layers.

4. (currently amended) The optical connector arrangement of any preceding Claim 1, wherein an optical fibre comprising the grating is bonded to the reflector using an index matching material.

5. (currently amended) The optical connector arrangement of ~~any preceding Claim~~
1, wherein the embedded connector component is potted into a recess in the substrate
using an optically transparent material.

6. (original) The optical connector arrangement of Claim 5, wherein the optically
transparent material is formed flush with the surface of said substrate material.

7. (currently amended) The optical connector arrangement of ~~any preceding Claim~~
1, wherein the reflector has a curved reflecting surface.

8. (original) The optical connector arrangement of Claim 7, wherein the curved
reflecting surface is part of a cylindrical surface.

9. (original) The optical connector arrangement of Claim 7, wherein the curved
reflecting surface has a substantially constant part elliptically shaped or parabolically
shaped cross-section along its length.

10. (original) The optical connector arrangement of Claim 9, wherein an axis of the fibre optic grating lies proximal to a focal point of said part elliptically shaped or parabolically shaped cross-section along at least part of the length of said curved reflecting surface.

11. (currently amended) The optical connector arrangement of ~~any preceding~~ Claim 1, wherein the surface connector component comprises a further optical fibre incorporating a grating for optically co-operating with the fibre optic grating provided in said substrate.

12. (currently amended) The optical connector arrangement of ~~any preceding~~ Claim 1, wherein a grating comprises one or more of: a Bragg grating, a slanted/blazed Bragg grating and a long period grating.

13. (currently amended) The optical connector arrangement of ~~any preceding~~ Claim 1, wherein radiation emitted from the surface of said substrate material is substantially collimated.

14. (original) An embeddable connector component for embedding in a substrate material and/or for use in a surface connector component, said embeddable connector component including a fibre optic grating optically coupled to a reflector for directing radiation emitted from said fibre optic grating to a surface of a substrate material.

15. (original) The embeddable connector component of Claim 14, wherein an optical fibre comprising the grating is bonded to the reflector using an index matching material.

16. (currently amended) The embeddable connector component of Claim 14 or Claim 15, wherein the reflector has a curved reflecting surface.

17. (original) The embeddable connector component of Claim 16, wherein the curved reflecting surface is part of a cylindrical surface.

18. (original) The embeddable connector component of Claim 16, wherein the curved reflecting surface has a substantially constant part elliptically shaped or parabolically shaped cross-section along its length.

19. (original) The embeddable connector component of Claim 18, wherein an axis of the fibre optic grating lies proximal to a focal point of said part elliptically shaped or parabolically shaped cross-section along at least part of the length of said curved reflecting surface.

20. (currently amended) The embeddable connector component of ~~any one of Claims 14 to 19~~ Claim 14, wherein said grating comprises: a Bragg grating, a slanted/blazed Bragg grating or a long period grating.

21. (currently amended) The embeddable connector component of ~~any one of Claims 14 to 20~~ Claim 14, wherein radiation reflected by said reflector is substantially collimated.

22. (currently amended) A panel for a vehicle fuselage, component, body or hull, comprising the embeddable connector component according to ~~any one of Claims 14 to 21~~ Claim 14.

23. (original) An vehicle comprising a composite panel according to Claim 22.

24. (original) A method of manufacturing a vehicle, comprising incorporating a composite panel according to Claim 22 into a vehicle fuselage, component, body or hull.

25. (currently amended) A surface connector component for use in the optical connector arrangement according to ~~any one of Claims 1 to 13~~ Claim 1.

26. (original) A method of manufacturing an optical connector arrangement comprising:

embedding a connector component in a substrate material, said embedded connector component including a fibre optic grating optically coupled to a reflector for directing radiation emitted from said fibre optic grating to a surface of said substrate material; and

providing a surface connector component for collecting radiation emitted from the surface of said substrate material.

27. (original) The method of Claim 26, wherein the step of embedding the connector component in a substrate material comprises providing a plurality of composite material layers to form a composite material.

28. (original) The method of Claim 27, wherein each composite material layer comprises respectively aligned material fibres.

29. (original) The method of Claim 28, further comprising selecting the material fibres from one or more of the following materials: carbon, glass, metal and Kevlar.

30. (currently amended) The method of ~~any one of Claims 26 to 29~~ Claim 26, comprising potting the connector component into a recess in the substrate material using an optically transparent material.

31. (original) The method of Claim 30, comprising forming the optically transparent material flush with the surface of said substrate material.

32. (currently amended) The method of ~~any one of Claims 26 to 31~~ Claim 26, comprising providing the surface connector component with a further optical fibre incorporating a grating.

33. (currently amended) The method of ~~any one of Claims 26 to 32~~ Claim 26, comprising selecting a grating from one or more of: a Bragg grating, a slanted/blazed Bragg grating and a long period grating.

34. (currently amended) The method of ~~any one of Claims 26 to 33~~ Claim 26, comprising forming the reflector from a cylindrical tube.

35. (currently amended) A method of manufacturing an embeddable connector component for use in an optical connector manufactured according to the method of ~~any one of Claims 26 to 34~~ Claim 26, comprising bonding an optical fibre comprising the grating to a reflector using an index matching material.

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U.S. National Phase of PCT/GB2004/005393

36-40. (cancelled)